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From: Shore, Berry
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Subject: POFA/PFOS New Clips

PFOS Continues To Plague New York Residents

By Dominique 'Peak' Johnson

November 7, 2016

Water On-Line

Blood testing began this month in Newburgh and New Windsor, NY, as residents are thought to have been exposed to perfluorooctane sulfonate, or PFOS.

According to the Times Herald-Record, the state Department of Health (DOH) outlined an outreach strategy to get as many people tested as possible.

Seven dates for blood testing were announced at a third public meeting concerning the crisis in late October.

“This is just the beginning of the process,” said Nathan Graber, director of DOH’s Center for Environmental Health.

In early May, a state of emergency was issued in the city of Newburgh after the New York State Department of Conservation detected PFOS in Silver Stream and Washington Lake.

Even though there were relatively low levels of PFOS detected in the water, the city still wanted to take emergency measures as a precaution.

The U.S. EPA released updated drinking water guidelines for PFOA and PFOS in May as the contaminants began to emerge regularly in regional water supplies.

The agency “issued a lifetime drinking water health advisory of 70 parts per trillion for human exposure to the manmade chemical,” per Albany’s Times Union.

Neither PFOA nor PFOS is made or used in the U.S. for manufacturing anymore, but the chemicals persist in the environment because of the strength of the carbon-fluorine bond.

According to AccuWeather.com, a study that was published by Environmental Science and Technology Letters found that the combination of toxic chemicals in aqueous film-forming foam (AFFF) has seeped into public water supplies from California to Rhode Island.

According to the report, “the study suggests at least six million people across the U.S. in 2016 had drinking water that exceeded the Environmental Protection Agency’s lifetime health advisory for certain acids associated with the foams.”

Researchers from UC Berkeley and Harvard University report that these “highly fluorinated chemicals are linked to cancer, obesity, high cholesterol and endocrine problems, among other concerns,” per AccuWeather.

Image credit: "Chevron's Toxic Legacy in Ecuador's Amazon, April 2010" © Rainforest Action Network 2010 used under an Attribution 2.0 Generic license:<https://creativecommons.org/licenses/by-nc/2.0/>

The case for public blood tests for PFOA and PFOS: Hoosick Falls, New York, residents received blood tests for PFOA

By Kyle Bagenstose and Jenny Wagner, staff writers

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Bucks County Courier Times

The envelopes arrived in Rob Allen's mailbox in Hoosick Falls, New York, on June 6. There were six in all: one for Allen, one for his wife, Heather, and one for each of their four children, now 10, 7, 5 and 2.

They carried the results of the blood tests the state announced earlier in the year for all the residents of the upstate Hoosick area after the toxic compound PFOA was found in their drinking water about two years prior. The contamination has been traced to a nearby manufacturing plant owned by Saint-Gobain, a plastics and materials company.

Allen opened his envelope first. It showed his blood contained 50 parts per billion of PFOA, about 25 times that of the average American. It took him by surprise.

"I didn't think I'd be that high. A lot of the water I drank was in the school and the school ended up testing fine, which was a great, great relief," Allen said.

His wife's results showed much less of the chemical, and was just above the national average of about 2 ppb.

But their relief turned to shock when they opened their children's envelopes. Three of the four had blood levels higher than Allen, led by their then almost 2-year-old daughter, who had more than 100 ppb.

They realized Heather's levels probably were so low because she passed the chemical

to the children during pregnancy and through breastfeeding, an effect well documented by scientific studies.

"The choices we made for the healthiest possible children were trumped by the fact that all of this stuff happened (and) we had no idea," Rob Allen said.

New York State tested blood of 2,000-plus residents around Hoosick Falls, New York

Despite that "earth-shattering" conclusion, he said the test results have been invaluable to the family as they try to understand the implications of having the mysterious, unregulated chemical in their bodies. They've taken to doing their own research into existing studies on possible health effects.

"We just really need to know in terms of the future what we need to expect. We need to know that I have to keep an eye on liver, thyroid issues, in particular, at certain ages," Rob Allen said, adding that other studies have shown PFOA can also suppress children's immune systems.

Rob Allen's outlook conflicts with statements made by federal agencies to residents of Bucks and Montgomery counties, who are faced with similar drinking water contamination of PFOA and PFOS. Because research into the health effects of the chemicals is still developing, those agencies have said blood tests wouldn't be helpful to residents.

In a July letter responding to local lawmakers who requested the Navy fund a blood testing program in Bucks and Montgomery counties, Assistant Secretary of the Navy Steve Iselin declined to pursue the matter after consulting with the U.S. Agency for Toxic Substances and Disease Registry, the federal agency typically tasked with conducting such assessments.

"ATSDR does not recommend blood testing for several reasons," Iselin wrote. "First, the test results are not clinically interpretable; that is, they will not help individuals or their

physicians determine if current or future health problems are related to PFOS or PFOA, or guide treatment plans."

Then in August, at a packed town hall meeting in Horsham, Karl Markiewicz, a senior toxicologist with the ATSDR, answered health concerns from a former military firefighter by saying there was little a doctor could test for due to the exposure.

"Is there a clinical test or is there a clinical symptom that (a person) could look for or tell (their) doctor to look for? I mean there really isn't," Markiewicz said.

The stance by federal officials has implications for at least 70,000 people in the area that is at the heart of contamination here, not including past residents or those in neighboring communities.

Allen said he heard similar statements in response to Hoosick area residents' requests for blood testing.

"Most groups are going to be reluctant to do anything about it ... to open up the can of worms which is blood testing," Allen said. "They're going to say, 'Look, the number's not conclusive, we don't know exactly what's going to happen.' And that's nonsense, because we don't have to know exactly what's going to happen."

Laurel Schaider, a research scientist for the Silent Spring Institute, a Massachusetts-based organization that studies water quality and toxins, acknowledged officials can be reluctant to order testing when scientists don't know what blood levels mean.

"But we find that people do want to know, and you can explain to them -- even if there's no guideline -- here's how you compare to the rest of the U.S. or maybe compare to other residents at this particular site, and that's helpful for them," Schaider said.

“And sometimes the answer is that they have been exposed to a high level and they find that helpful to know, even if that's disturbing information to have,” she added.

From a health care perspective, blood testing is important to determine future risk and future health screenings, said Eileen Van Parys of New Britain, a semiretired cardiovascular clinical specialist nurse with a doctorate in health education. She likened it to diabetes or high cholesterol.

"Knowing the exposure gives you a leg up on diagnosing or expecting something possible in the future," said Van Parys, who has been fighting for blood testing for her family members who live in Warminster.

Armed with the information, Allen agreed he and his doctors can watch for some of the ailments associated with the chemical compound.

“I need to know that if I'm in the hospital I can also say, ‘Hey, please do an ultrasound of my liver to see if I have a growth, or my kidney,’ ” Rob Allen said.

He is not alone in that view. From New York to New Hampshire and from Ohio to West Virginia, people affected by the growing national crisis of PFOA and PFOS have told this news organization that blood tests empowered them to start making sense of their exposure. And some said it was the first step toward justice and financial compensation.

PFOA, along with PFOS, is ubiquitous in the modern world. The chemicals were used in Teflon pans, non-stick coatings, pizza boxes and products like firefighting foams, meaning they are widespread in our daily environment, and in many cases, our drinking water.

At the very least, Schaidt said, blood testing results also can get people to start thinking about how to avoid some of those additional exposures.

In the Hoosick area, the blood of more than 2,000 people has been tested by the New York State Department of Health. Overall, blood tests have shown an average of about 23.5 ppb. But for those like Rob Allen, who drank from the most contaminated water source -- the public supply -- the level was 55 ppb.

That compares to a level of just 2.08 ppb for the average American, according to a nationwide testing program administered by the U.S. Centers for Disease Control and Prevention. The level of PFOS for the average American is 6.31 ppb. While PFOS wasn't found in significant amounts in Hoosick, it was found in higher amounts than PFOA in Bucks and Montgomery counties.

PFOS at Pease, New Hampshire

In 2014, PFOS was found in a drinking water well serving the Pease Tradeport and the New Hampshire Air National Guard Base. Contamination there is similar to that of Bucks and Montgomery counties, as PFOS was the contaminant found in higher levels and was suspected to have come from firefighting foams used at the joint military-public facility.

Andrea Amico of Portsmouth, New Hampshire, started the group Testing for Pease to help advocate for blood testing for toxic compounds in the water at the Pease Tradeport.

Andrea Amico's husband worked at the tradeport and she had two kids in the facility's day care. The Portsmouth resident immediately began researching perfluorinated compounds, and said she believes state and local officials downplayed the situation at an initial public meeting.

"It was very much like, 'We don't recommend blood testing and we don't think that the science is conclusive about health effects.' And, you know, 'The well has been shut down so everything will be OK.' " Amico said. "That just didn't sit well with me."

When she talked with her pediatrician, she learned that the blood testing wasn't something she could simply get a lab slip for.

"He said, 'Yeah, I think a blood test would be a good idea to establish a baseline so we know what levels they have in their bodies,'" Amico recalled.

Amico began advocating for blood testing, at first for her family, and then later for the entire community with the help of two other local mothers. In 2015, the New Hampshire Department of Health and Human Services and ATSDR worked together to provide blood testing for approximately 1,600 people.

The results showed statistically elevated levels of several of the chemicals: on average, people had about 8.59 ppb of PFOS in their blood -- 36 percent higher than the average American. For PFOA, the average was 3.2 ppb -- about 48 percent higher.

In addition, the blood testing found that 124 people, about 10 percent of those tested, had PFOS levels above 21.7 ppb -- the 95th percentile for nationwide levels. And levels of PFOA for children were worse: 19 percent had statistically high levels of PFOA, about four times the national average.

The Pease testing program, completed last summer, was the first nationally to examine the blood of a large population of people primarily exposed to PFOS. Perhaps for that reason, the ATSDR's Karl Markiewicz remarked at the August meeting in Horsham that residents of Bucks and Montgomery counties might find similar results of PFOS in their blood.

"I think the same thing that we see at Pease is that same thing that we would see here if we did a biomonitoring-type study," Markiewicz said.

Van Parys disagreed, based on her experience as a clinician.

"I've kind of learned in nursing that you don't assume that the product will be the same or that the same thing is going to happen," she said. "You never really know in health care."

Markiewicz also seemed to downplay the results of the Pease study, suggesting that while statistically elevated, the blood levels were "certainly way lower than the high or very high levels" seen in other exposed populations.

"We don't really understand what (the Pease levels) means for public health," Markiewicz said.

But an analysis by this news organization found significant differences in exposures at Pease and locally, and that residents here could have had greater exposures to PFOA and PFOS, even though the amounts of the chemicals in the water at Pease likely was greater.

According to information posted by the city of Portsmouth, New Hampshire, the main Pease well was contaminated with about 2.85 ppb of the chemicals in 2014. Even after factoring in other water sources, this news organization estimated tap water at Pease would have averaged about 1.17 ppb of the chemicals just before the contaminated well there was taken offline.

Warminster was the most widely affected residential water system locally. Using the highest PFOS and PFOA levels ever found in each well in Warminster and adjusting for how much water each of the system's 19 water sources were providing in 2013, this news organization estimated that levels would have reached about 0.176 ppb.

That's only about 15 percent of the level in Pease, although it's more than double the EPA's health advisory of 0.07 ppb (70 parts per trillion) for drinking water.

But local people were likely drinking more water for longer. According to an analysis by the New Hampshire Department of Health and Human Services, the Pease blood testing program included "any person who worked on, lived on, or attended child care on Pease and consumed the contaminated water or who consumed water from a contaminated private drinking well in proximity to Pease."

Amico noted that there are no homes on Pease, which was redeveloped as an industrial and business park in 1991. Instead, the exposed population mainly consisted of commuters, children in two day care centers and people in the service who commuted to the active air reserve station.

A state analysis of the individuals tested showed the average person in the blood testing program spent six and a half years at Pease. Nearly 40 percent spent less than four years there.

Only two of the people tested reported having a contaminated private well, whereas more than 150 wells have been contaminated in Bucks and Montgomery counties at levels above what the EPA considers safe.

And of those at Pease who answered the question on the testing program questionnaire, about 83 percent reported consuming less than two liters of water a day from the facility, which is the amount consumed daily by the typical American. The statistic suggested a vast majority of the residents split their water consumption between on-base, contaminated sources and other sources.

“At Pease, the exposure was mostly through people going to work and drinking water at work, or children drinking water at their day care ... their consumption might be less because it was only when they were at school or work,” said Schaidler, who also is a technical adviser for the Pease community assistance panel that helps guide the ATSDR’s work there.

Finally, while PFOA and PFOS levels in Pease tap water may have been higher than they were for the affected local area, they weren’t higher than the levels found in the Horsham Air Guard Station supply in 2014. Tests there showed PFOS at 11.9 ppb and PFOA at 3.28 ppb -- more than five times the levels found in the most contaminated Pease well, which also was diluted by other water sources.

Like other residents in Bucks and Montgomery counties, the men and women serving

their country at the air guard station still have no idea how much of the chemicals entered their blood.

Truth serum

Attorney Rob Bilott, of Ohio's Taft Stettinius & Hollister law firm, said blood testing can offer much more than just basic information to residents exposed to PFOA and PFOS.

For the past 15 years, Bilott has represented residents of six water districts in the Mid-Ohio Valley in a massive class-action lawsuit against DuPont, after PFOA was found to have entered their drinking water from DuPont's Washington Works, a manufacturing plant along the Ohio River.

Bilott's court victories won blood testing for some 69,000 residents in Ohio and West Virginia. But it was the extra scientific step that occurred there, which has not yet occurred in Hoosick or Pease, that started Bilott on a journey that may outlast his lifetime.

As a result of the class-action suit, a court ordered DuPont to pay more than \$100 million to fund the largest human study on the health effects of PFOA to date, the C8 Science Panel.

"The agreement -- the way we set it up -- was very unique. ... I don't think there'd been an agreement like that before," Bilott said, adding that DuPont was legally forbidden from contesting the findings of the study in subsequent personal injury suits.

Researchers spent several years reconstructing how much PFOA people in the six water districts were believed to have been exposed to, and thus, how much PFOA would be in their blood. Blood samples were taken, and for the most part, the results lined up.

Researchers found median blood levels of 28 ppb for PFOA, meaning half of those sampled were above or below that amount. But the average blood level was 82 ppb, suggesting the most exposed individuals had extremely high levels of the chemical, and the median level in the most contaminated community was 224 ppb. The researchers then spent several more years analyzing whether those blood levels were linked to diseases.

Bilott admitted there was some public frustration at the pace of the studies. "We even had, at one point, hearings with the court to look into whether or not steps needed to be taken to force the panel to move quicker," Bilott said.

When the study results began to arrive seven years later, the researchers had found "probable links" to "high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer, and pregnancy-induced hypertension."

Stunned, Bilott urged regulators to act swiftly on the chemicals, and shared the findings of studies suggesting that allegedly "safe" levels were too high.

"We sent letters to the EPA and to other state and federal agencies dating back to 2001, asking them to get involved and do whatever needed to be done to get people on clean water," Bilott said. "That's something we've been advocating that the agencies do for 15 or 16 years."

"Blood data was extremely important and useful," Bilott said. "For example, if somebody had a diagnosis of cancer ... by looking at the blood levels and modeling them over time, they were able to know whether or not that person actually had (the chemicals) in their blood at, or prior to, the time they were diagnosed."

After the researchers completed their health studies, more than 3,500 residents filed personal injury claims against DuPont.

Two of Bilott's clients have each won jury awards eclipsing \$1 million, and one received

punitive damages as well. Several others have settled out of court. With thousands more to go, Bilott hopes to speed up the number of cases to 40 a year. But even at that pace, it would take nearly a century to resolve all the cases.

"It's certainly the plaintiffs' goal to get their cases heard and resolved as quickly as possible," Bilott said.

Others involved with the C8 Science Panel also acknowledge the double-edged sword that resulted from the study. On one side, there's the semblance of an answer and the first trickles of justice as DuPont is found liable for the health effects PFOA caused. On the other hand, there's the long road ahead before either science or DuPont's reckoning are complete.

"We said six things (health conditions) are probably linked to PFOA, but we didn't have enough data to be sure," said Kyle Steenland, an epidemiology professor at Emory University and one of the three primary researchers on the C8 Science Panel. "The only way epidemiology works is by getting more and more studies until you get a weight of evidence."

For the purposes of the lawsuit, the researchers studied 55 possible health effects and concluded that with six, it was "more probable than not," that they were caused by PFOA, Steenland said. That's enough for the court, but it means future studies are needed to both confirm the C8 findings and to determine if it missed anything, or if random chance skewed the results.

Steenland said that without additional data, he's not confident in saying there are specific blood level thresholds where certain health effects start to occur. However, he pointed out, the median PFOA blood levels seen in Ohio and West Virginia are similar to Hoosick Falls -- between 20 and 25 ppb. A typical person at Pease had less than half of that, but about 150 people still had blood levels comparable to those in the other areas.

"I would argue that blood levels are informative because you, in fact, can compare them to other situations," Steenland said.

Dr. Paul Brooks, an Ohio physician who became one of the leading community activists pressuring DuPont, agreed blood tests help people determine if their health may be at risk.

"Once the people know their drinking water (has been cleansed) they have a sense of security. Well, you're not secure at all; you have to go for blood tests," Brooks said, adding that it takes several years for the amount of the chemicals in the blood to decrease by half.

Rob Allen said Hoosick Falls residents now are looking for follow-up testing for that exact reason, although it was a struggle just to get the tests approved the first time around.

"All we have is a baseline and we don't actually know if our numbers are going to go down, so we need another round or another couple rounds," Allen said. "And, again, use that data to help other people figure out what's going to happen with this."

Allen and several scientists with whom this news organization spoke noted that blood testing data for exposed communities also could prove useful for future studies.

"Often times, looking at one individual town or small community, it's difficult to have enough people for a health study to really get the statistical power to see a difference, especially for diseases that are a little more rare," Schaider said. "So to be able to combine results from multiple communities would be helpful, but you need to have consistency when the information is collected."

Bruce Alexander, a University of Minnesota environmental health sciences professor who has conducted health studies on people exposed to PFOS, said blood testing is useful even if no further studies are done, as it can help determine if exposure has occurred and evaluate the effectiveness of cleanup operations. He points to a situation near a 3M facility in Minnesota, where blood tests were used to determine exposures to the chemicals had been stopped.

“The Minnesota Department of Health implemented a biomonitoring program that showed the filters installed to remove PFCs were working to reduce the blood levels in the affected community,” Alexander said. “Assessing the (blood levels) of the population is probably the best way to monitor the potential exposure to PFCs.”

What about Bucks and Montco?

As many as 100,000 residents of Bucks and Montgomery counties whose drinking water has been found to contain PFOS and PFOA are still without blood tests like those that took place in Hoosick Falls and Pease, or a large health study like the one in Ohio and West Virginia.

But it's not for lack of trying.

Law firms already are attempting to replicate the successes that Bilott achieved and two, including New York City-based Weitz & Luxenberg, which is associated with Erin Brockovich, have sued the manufacturers who allegedly supplied firefighting foam to the military bases in this area.

Among the damages sought? Blood testing, continued screening for illnesses, and health studies to determine if blood levels can be linked to any diseases or health effects.

Williams Cuker Berezofsky, a center city Philadelphia firm, is suing the Navy in pursuit of the same.

Bilott, the Ohio lawyer, said he hopes the precedent set with the C8 Science Panel will carry over to communities like those in Bucks and Montgomery counties, and defendants will be forced to pay for comprehensive health studies.

But some local lawmakers and residents already have begun trying to find another entity to foot the bill for blood tests or health studies, and sidestep a protracted legal battle.

A collection of about a dozen politicians, including state representatives and senators, U.S. representatives and senators, and Gov. Tom Wolf, have written to the military, the EPA and the ATSDR, urging them to provide blood tests or a health study. Legislation has been proposed, but not passed.

Wolf's office also looked at potential blood testing by the state Department of Health, but decided a "very conservative" estimate of \$7 million to test about 35,000 people (about \$200 a person) is beyond the state's means.

"Pennsylvania is facing a structural deficit of upwards of \$2 billion in 2016-17. We simply do not have the resources to commit to dedicating \$7 million or more to blood testing," Wolf wrote in a letter.

That \$7-million estimate appears to be in line with others. While costs to test 69,000 people in Ohio and West Virginia reached \$70 million about a decade ago, sampling costs appear to have come down since then.

Jake Leon, communications director with the New Hampshire Department of Health and Human Services, said the state split the costs of blood testing with the U.S. Centers for Disease Control and Prevention, and also benefited from a local hospital volunteering to perform blood withdrawals for free.

The CDC paid for the initial 700 blood tests, and the state paid about \$180,000 for the next 900, Leon said. That amounts to about \$200 per person, which is roughly the same as the estimate Wolf's office provided.

Prices were higher for the 3,000 Hoosick area residents tested.

"The cost to the state, which includes retrofitting of equipment, phlebotomists, event

staffing, data entry and dissemination is approximately \$1,000 per test," the state's health department wrote in an email.

Additional funding for a health study using blood testing results from Pennsylvania would be another matter. Pease and New Hampshire haven't taken that step, but in Ohio and West Virginia, the price tag was a little over \$30 million, Bilott said.

While the ATSDR initially pushed back on the idea of even testing residents' blood, the agency later agreed to support a health study following a meeting with U.S. Sen. Bob Casey, D-Scranton, this past summer.

"CDC/ATSDR is supportive of conducting a national-scale study of the health effects associated with community exposures to (the chemicals)," Taka Allende, a health communications specialist with the CDC, wrote to this news organization in October. "CDC/ATSDR is involved in ongoing discussions with the Department of Defense and state partners about a potential national health strategy for (the chemicals) that could involve ... individuals from Pennsylvania."

But like Pennsylvania government, the ATSDR said it doesn't have the funds to complete such a study. According to Casey, the CDC estimated it could cost \$20 million to \$30 million, although Allende said that amount is subject to revision, based on how the study is designed.

"Neither the CDC nor ATSDR are currently funded to conduct a study of this scope," Allende said.

Even if a large study is funded and implemented, the ATSDR said it could take five to eight years to complete, similar to the timeframe for the C8 panel.

The legal value of such a study to any personal injury suits also would need to be determined. Unlike in the Mid-Ohio Valley, where DuPont was legally barred from contesting the results of C8 Panel, defendants in any lawsuit here likely would be free to challenge the study's findings

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